

REMARKS

The issues outstanding in the Office Action of May 1, 2009, are the rejections under 35 U.S.C. 102 and 103. Reconsideration of these issues, in view of the following discussion, is respectfully requested.

Requirement for Restriction

Applicants' traversal of the requirement for restriction is maintained for the reasons of record. Appropriate action will be taken at such time as allowable subject matter is indicated.

Rejections Under 35 U.S.C. 102

Claims 1 and 4-8 have been rejected under 35 U.S.C. 102(b) over Ross '451. Reconsideration of this rejection is respectfully requested. Ross discloses an ink composition for deposition on the surface of a semiconductor device, to provide a contact area for connection to external circuitry. The composition comprises an ink system containing a metal powder, a binder, a vehicle, a metal frit and a fluxing agent. The Office Action suggests that the fluxing agent is equivalent to the present etching agent, which allegation is discussed more fully below. However, claim 1 and claims dependent thereon have been amended in order to recite the presence of a saturated fatty acid, as disclosed, for example, at page 5, lines 31-35, and in the examples. Claim 19 has been added directed to the specific fatty acids disclosed in this portion of the specification. Inasmuch as Ross does not disclose the use of the fatty acid, it clearly does not anticipate the present claims. Moreover, Ross clearly does not suggest the present claims, inasmuch as one of ordinary skill in the art would not be disposed to add such a fatty acid, in the absence of any direction thereto.

It is further submitted that Ross fails to disclose a material wherein the etching agent has "etching activity" as defined in the present specification, for example at page 4, paragraph 11, enabling "removal" of the antireflection layer under low temperature, removal of oxidation layers, etc. As is well known in the art, a "fluxing" agent is one which, such as rosin, used in soldering, decomposes or liquefies the

material but does not result in *removal*. Note, for example, at column 4, lines 32-34 where Ross teaches that the fluxing agent *disassociates* oxides, but does not indicate that they are removed. This difference in function of the etching verses fluxing agent is apparent in that Ross also employs a metal frit which becomes liquid in the heating step, in order to establish a metallurgical bond between the surface and the metal powder, while the present claims do not require such a frit material (although they do not, of course, exclude one). In Ross's process, the low melting metal powder is necessary to improve the wetting of the metal powder grains, see column 4, the last paragraph. Ross accordingly fails to disclose removal/etching as herein. The present materials enable preparation of conductive layers for electrodes or circuits in one process step, whereas in known processes, at first grooves and deepened channels have to be prepared by etching steps and in further process steps the metallization has to follow. The present compositions allow to prepare metalized lines and structures in one process step, because the disclosed and claimed compositions are suitable to etch and deposit metal layers at the same time. As a result, not only does Ross fail to anticipate the present claims, but it fails to suggest them. This aspect of removal is highlighted in claims 4-6 and 17, but is also true of claim 1. Withdrawal of this rejection is accordingly respectfully requested.

Claims 1 and 4 have also been rejected under 35 U.S.C. 102(b) over Bickler '346. Reconsideration of this rejection is also respectfully requested. Similarly to Ross, Bickler fails to disclose the use of an unsaturated fatty acid, nor does it suggest same. Moreover, as with Ross, the "etching" agent serves to dissolve oxides, but does not truly "etch" the material or substrate inasmuch as high temperature is necessary to vaporize the material. As discussed in the present specification, e.g., at paragraphs 11 and 18, the high temperatures needed to activate free F⁻ ions to remove material are not needed with the use of the present etching material. Accordingly, it is submitted that this reference also fails to disclose or suggest the present claims, and withdrawal of the rejection is respectfully requested.

Rejection Under 35 U.S.C. 103

Claims 2-3 and 9-12 have been rejected under 35 U.S.C. 103 over Ross taken with Martin '563 and Tsunaga '236.

The deficiencies of Ross are discussed above. Martin and Tsunaga are cited for a teaching of thermosetting resin, argued to be obvious as a binder, and organic solvent. However, Martin discloses the preparation of an acrylic film including silver particles which is solderable, and is therefore not submitted to be compatible with the inks of the primary reference. Patentees disclose, at column 2, lines 23-28, the dissolution of vinyl powder and acrylic powder in solvent to form a solution, which solutions are mixed with metallic silver particles and epoxy to form an ink, and applied to the substrate to form a film thereon. This is simply not a compatible technology with the materials of the primary reference. Tsunaga, directed to copper conductive compositions, is also not seen to provide teachings useable in the specific environment of the primary reference. In any event, these combinations also fail to disclose or suggest, for example, the use of a fatty acid which the present specification teaches enables better removal of materials from the substrate. Thus, it is submitted that the combination of references also fails to suggest the present claims, and withdrawal of this rejection is also respectfully requested.

The claims of the application are submitted to be in condition for allowance. However, if the Examiner has any questions or comments, he or she is cordially invited to telephone the undersigned at the number below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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